Quantum Dot Spectrometer (GSFC IRAD)

Completed Technology Project (2015 - 2019)

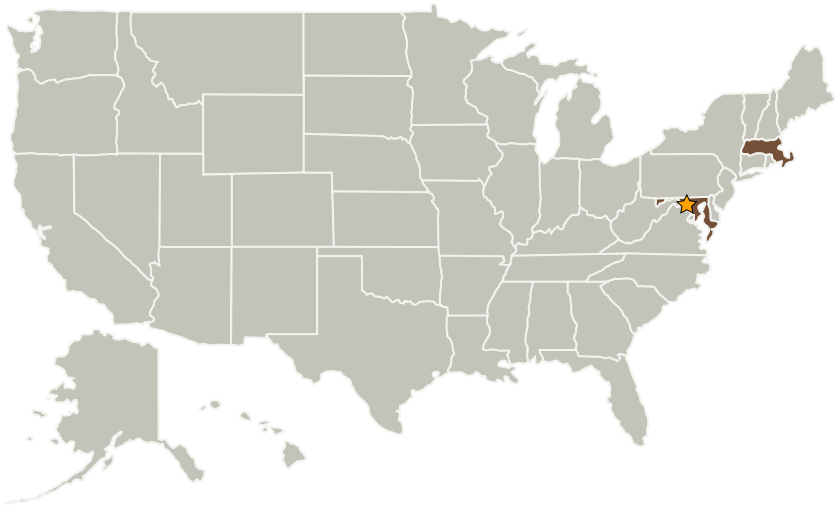
Project Introduction

We are developing an ultra-compact, low mass, low-cost, yet high resolution, multispectral imager based on an innovative quantum dot array concept. The quantum dot array acts as an absorptive filter array and replaces prisms, gratings, interference filters or other optical components currently used in spectrometers.

Anticipated Benefits

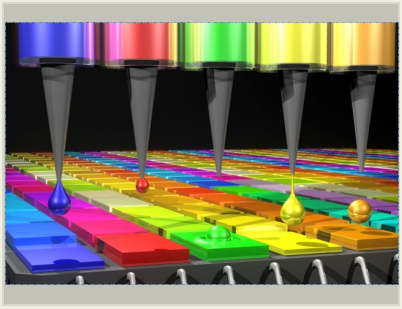
The tiny form factor and low cost of QDS promises ultra-compact multispectral instruments appropriate for small satellite missions.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland

Primary U.S. Work Locations	
Maryland	Massachusetts



Quantum dot spectrometer

Table of Contents

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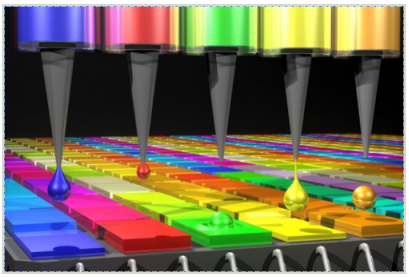
Images



QDS
Quantum dot spectrometer
(https://techport.nasa.gov/image/34558)

Project Website:

http://aetd.gsfc.nasa.gov/

Organizational Responsibility

Responsible Mission Directorate:

Mission Support Directorate (MSD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Center Independent Research & Development: GSFC IRAD

Project Management

Program Manager:

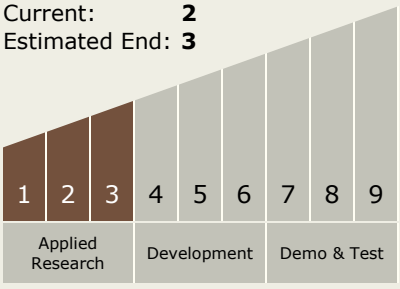
Peter M Hughes

Principal Investigator:

Mahmooda Sultana

Technology Maturity (TRL)

Start: **1**
Current: **2**
Estimated End: **3**



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Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.1 Detectors and Focal Planes

Other/Cross-cutting:

- TX08 Sensors and Instruments
  - TX08.3 In-Situ Instruments and Sensors
    - TX08.3.4 Environment Sensors

Target Destinations

The Sun, Mars, Outside the Solar System

Supported Mission Type

Push